



MAQS

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September 29, 2017

006AS-213825

Roylene Cunningham, OCE-101
U.S. Environmental Protection Agency
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Stephanie Ogle, P.E.
Washington Department of Ecology
Industrial Section
P.O. Box 47600
Olympia, WA 98504-7600

Re: Source Testing: KapStone Kraft Paper Corporation No. 4 M&D Sawdust Digester Inlet Valve Steam Vents

300 Fibre Way
Longview, WA 98632

This correspondence is notice that Montrose Air Quality Services, LLC, an affiliate of Montrose Environmental Group, Inc. (MAQS), will conduct source testing for the above-referenced facility, scheduled for the week of October 31st, 2017. MAQS will follow this Source Test Protocol/Plan unless EPA and/or Ecology request changes prior to the start of testing.

1. **Source to be Tested:** No. 4 M&D Sawdust Digester Inlet Valve Steam Vents
2. **Purpose and Scope of Testing:** Adherence with Information Request presented to KapStone by EPA Region 10, dated July 13, 2017. A copy of the Information Request is attached to this testing protocol/plan as Attachment C.
3. **Source Description:** No. 4 M&D Sawdust Digester Inlet Valve Steam Vents. No. 4 M&D Sawdust Digester itself provides softwood sawdust pulp to the KapStone paper mill operations. The 2017 digester average production rate year to date is 110 ton/day.
4. **Pollutants to be Tested:** Methanol and Total Reduced Sulfur (TRS)
5. **Test and Criteria Locations:** No. 4 M&D Sawdust Digester Cyclone Inlet & Atmospheric Vent on screw conveyor. See Attachment A for additional details on testing location. MAQS during a pre-protocol site visit determined that each test port location meets EPA Methods 1 and 2 criteria, 40 CFR 60, Appendix A.



6. **Testing Schedule:**

Day 1, October 31, 2017	Mobilize and setup
Day 2, November 1, 2017	Test 2 of 3 runs
Day 3, November 2, 2017	Complete 3 rd test run and de-mobilize

7. **Process/Production Data:** KapStone will provide process/production data as listed in Attachment B. The No. 4 M&D Sawdust Digester will be operated at or above the 2017 average production rate during the duration of the performance test. KapStone will include the process/production data collected for the time period starting 30 days prior to the performance testing and ending five days after the testing concludes in the emission testing report submitted to EPA and Ecology.
8. **Test Methods to be Used:** Testing will be conducted in accordance with EPA methods in Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Appendix A, and from the Electronic Code of Federal Regulations (www.ecfr.gov), January, 2014:

Flow Rate:	EPA Methods 1 and 2 (S- or p-type pitot flow traverses)
CO ₂ and O ₂ :	Assume ambient molecular weight 28.96
Moisture:	EPA Method 4 (impinger train technique, single point)
TRS ¹ :	EPA Method 16 (gas chromatography/flame photometric detection)
Methanol ² :	EPA Method 308 (sorbent tube and midjet impinger with analysis by GC/FID)

¹16 injections will be analyzed over the course of each run whose duration will be between 3 and 6 hours

²60 liters minimum will be collected during the course of each run

9. **Number of Sampling Replicates and their Duration:** The TRS testing will consist of three (3) test runs of at least three (3) hours each, not to exceed six (6) hours in duration. The Methanol testing will consist of three (3) test runs with a minimum of 60 liters per test run. One moisture and flow traverse will accompany each TRS/Methanol test run.
10. **Quality Assurance/Quality Control (QA/QC):** MAQS has established a quality management system that led to accreditation with ASTM Standard D-7036 (Standard Practice for Competence of Air Emission Testing Bodies). In addition, MAQS project managers have been certified under the qualified source testing individual (QSTI) program instituted by the Source Evaluation Society (SES). MAQS has completed multiple functional assessments for ASTM D7036-04 which were conducted by the American Association of Laboratory Accreditation (A2LA). A2LA granted accreditation for the MAQS quality management system in February 2016. All testing will be overseen and supervised onsite by at least one Qualified Individual, as defined in 40 CFR 72.2.

Method-specific quality assurance/quality control procedures must be performed to ensure that the data is valid for determining source compliance. Documentation of the procedures and results will be presented in the source test report for review. This documentation will include at least the following:



Manual equipment procedures: Field crews will operate the manual testing equipment according to the test method requirements. On-site procedures include:

- Operators will perform pre- and post-test leak checks on the sampling system and pitot lines.
- Thermocouples attached to the pitots and probes are calibrated in the field using EPA Alternate Method 11. A single-point calibration on each thermocouple system using a reference thermometer is performed. Thermocouples must agree within $\pm 2^{\circ}\text{F}$ with the reference thermometer. Also, prior to use, thermocouple systems are checked for ambient temperature before heaters are started.
- Nozzles are inspected for nicks or dents and pitots are examined before and after each use to confirm that they are still aligned.
- Pre- and post-test calibrations on the meter boxes will be included with the report, along with semi-annual calibrations of critical orifices, pitots, nozzles and thermocouples (sample box impinger outlet and oven, meter box inlet and outlet, and thermocouple indicators).
- Blank reagents are submitted to the laboratory with the samples. Liquid levels are marked on sample jars in the field and are verified by the laboratory.

Audit Sample Requirement: The EPA Stationary Source Audit Sample Program was restructured and promulgated on September 30, 2010 and was made effective 30 days after that date. The Standard requires that the Facility or their representative must order audit samples if they are available, with the exception of the methods listed in 40 CFR 60, 60.8(g)(1). The TNI website is referred to for a list of available accredited audit Providers and audits (www.nelac-institute.org/ssas/). If samples are not available from at least two accredited Providers they are not required. Currently, accredited Providers offer audit samples for EPA Methods 6, 7, 8, 12, 13A, 13B, 26, 26A, 29 and 101A. Based on the above, KapStone is not required to obtain audit samples for this test program.

11. **Laboratory Identification and Analysis:** MAQS personnel will collect and submit all samples associated with this project to a qualified laboratory and will ensure the analyses are provided within the sample hold time to meet the reporting schedule. All laboratory results will be made available to KapStone upon receipt of the laboratory data. EPA Method 308 analysis for methanol completed by Enthalpy Analytical. Enthalpy Analytical will ensure the Method Method Detection Levels (MDL) will be met. Enthalpy Analytical will follow the July 13, 2017 Information Request, Attachment B – Calculating and Reporting Values Measured Below MDL, for test results below the MDL.

12. **Reporting Deadline and Units for Results:** KapStone will submit the test results report to EPA and Ecology within 45 days after concluding the performance test. Results will be expressed as concentrations (ppmvd), as rates (lb/hr), and on a production basis (lb/ton ODP).

13. **Montrose Air Quality:** Thomas Rhodes and Chris Hinson

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14. **Source Site Personnel:** Roberto Artiga and Wayne Wooster

Office (360) 575-5570/5578 (Artiga/Wooster)
E-mail Roberto.Artiga@kapstonepaper.com
Wayne.Wooster@kapstonepaper.com

15. **Regulatory Contacts:** Roylene Cunningham, OCE -101
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16. **Plant Entry & Safety Requirements:** The test team will follow internal safety policies and abide by any site-specific safety and entry requirements.

17. **Responsibilities of Test Personnel:** The test team will consist of one Project Manager, two technicians, and a GC/FPD operator. The Project Manager is responsible for overseeing sample and data collection, while the Technician works at the sample location. It is anticipated that Chris Hinson, QSTI, will be the Project Manager and John Lewis, QSTI, and Josh Muswieck, QSTI, will be the technicians. At least one team member will hold current QSTI and/or QI certifications for all test methods included in this test program.

18. **Administrative Notes:** As stated in the July 13, 2017 Information Request, Paragraph 3. Advance Notification, by no later than 30 days before the requested testing is required. This source test protocol/plan satisfies such requirement. As stated in the July 13, 2017 Information Request, if EPA requires any adjustment of the source test protocol/plan or operating conditions, EPA will notify KapStone within 30 days of receipt of the notice. If no notification is provided to KapStone within this 30-day period, KapStone will consider this protocol/plan to be approved.

Source test reports will be prepared by MAQS and will include all results and example calculations, field sampling and data reduction procedures, laboratory analysis reports, and QA/QC documentation. Source test reports will be submitted to EPA and Ecology within 45 days of the completion of the field work. KapStone will send one (1) hardcopy and one (1) electronic copy of the completed source test report each to EPA and Ecology at the listed address above.



Any questions or comments relating to this test plan should be directed to me.

Sincerely,

A handwritten signature in black ink, appearing to read "C. J. Hinson", is positioned above a horizontal line.

Christopher J. Hinson
Client Project Manager
Montrose Air Quality Services, LLC

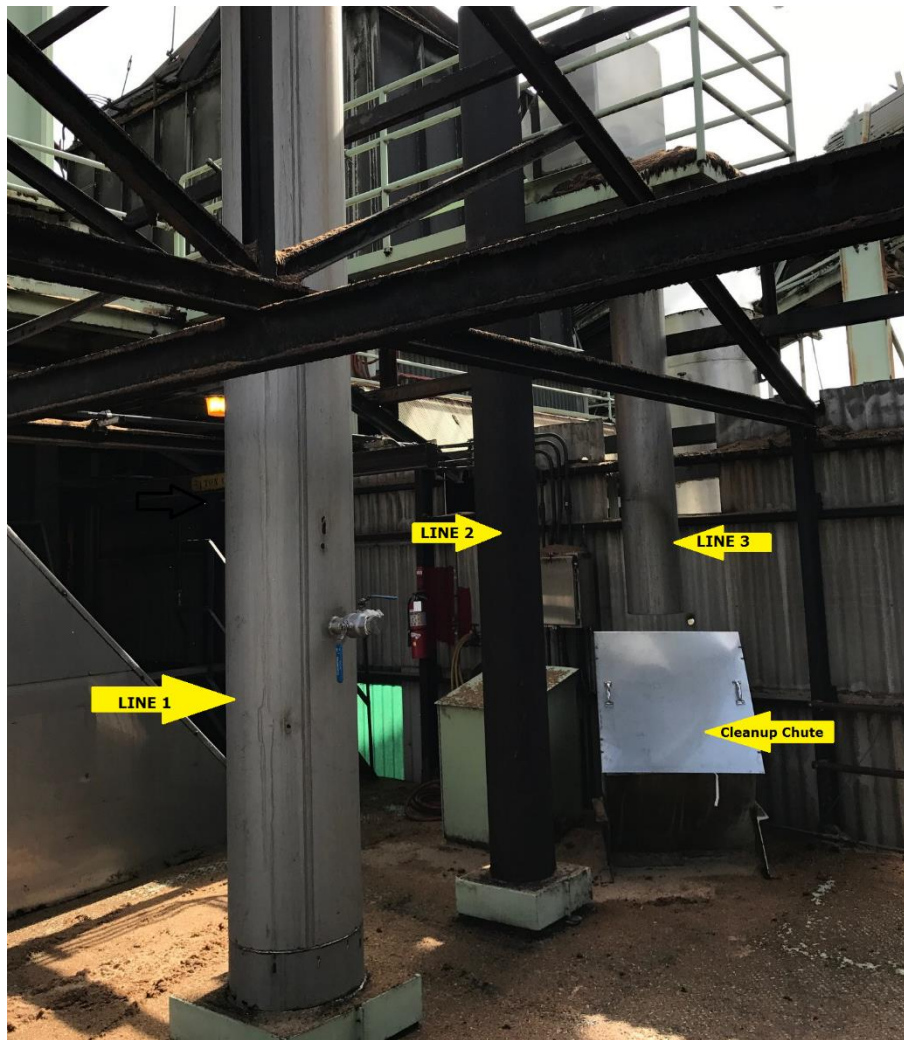
For information on MAQS and Montrose Environmental, go to www.montrose-env.com

cc: Wayne Wooster, KapStone Kraft Paper Corporation
Roberto Artiga, KapStone Kraft Paper Corporation

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Attachment A

No. 4 M&D Sawdust Digester Inlet Valve Steam Vents & TRS/Methanol Emission Testing Sample Locations



EPA noted that they observed three vents to atmosphere during the August 24, 2016 inspection. These three lines are describe below:

- **LINE 1.** This is the one active vent that has connectivity with the screw conveyor/metering screw. – **To be stack tested.**
- **LINE 2.** This dark colored mid-ground stack is disconnected from and blanked off at the screw conveyor below. – **It will not be stack tested.**
- **LINE 3.** This stack has no connectivity to the screw conveyor/metering screw. Below it, there is clean up chute with a metal covering. This chute is a drop leg to the screw conveyor used by operations to clean up sawdust and put it back into the screw conveyor for reclaim. It does not serve or act as an active vent. – **It will not be stack tested.**



No. 4 M&D Sawdust Digester Screw Conveyor atmospheric stack test ports



No. 4 M&D Sawdust Digester Screw Conveyor Cyclone Inlet Test Ports

Attachment B

No. 4 M&D Sawdust Digester Process/Production Data Parameters ^{1, 2}

- Millwater or other Substance Use added to sawdust hereafter as “Millwater” Use Log
- Sawdust mass feed rate (bone dry tons/hr – BDT) and wood species percent
- M&D Sawdust Digester Inlet Valve RPM
- M&D Sawdust Digester Inlet Valve Rotor pocket pre-purge steam pressure
- M&D Sawdust Digester Inlet Valve Rotor pocket purge steam pressure
- Sawdust Digester production rate (tons of oven dried pulp (ODP/hr))
- Any other process parameter used by the Facility or testing firm in determining or calculating emission rates in all units of measure required by this Information Request

¹Tom Wood, Stoel Rives, LLP, August 3, 2017 letter to EPA’s Julie Vergeront

²Julie Vergeront, EPA Region 10, August 11, 2017 email to Stoel Rives, LLP, Tom Wood

Attachment C

**EPA Region 10 to KapStone Kraft Paper Corporation, Longview, WA
Facility Section 114 Information Request, dated July 13, 2017**

**KAPSTONE
LONGVIEW, WASHINGTON
INFORMATION REQUEST**

DEFINITIONS

All terms used in this Information Request, including Attachments A and B, have their ordinary meaning unless such terms are defined below, elsewhere in this Information Request, in the Clean Air Act (CAA), 42 U.S.C. § 7401, or in 40 C.F.R. Parts 52, 60, or 63. For purposes of this Information Request:

1. “KapStone” means all employees and agents of Longview Fibre Paper and Packaging, Inc., d/b/a KapStone Paper Corporation, and its co-owners, parent corporations, and subsidiaries.
2. “Facility” means the Title V major source owned and operated by KapStone and located in Longview, Washington (at 300 Fibre Way).
3. “Ecology” means the Washington State Department of Ecology.
4. “Process Data” means, at a minimum, the following elements:
 - Sawdust mass feed rate (bone dry tons/hr) and wood species (percent);
 - Screw conveyor/metering screw rate in revolutions per minute (rpm);
 - Millwater into the screw conveyor/metering screw volumetric flow rate and temperature;
 - Cooking liquor (or any other substance added to the sawdust prior to the digester) volumetric or mass feed rate, as appropriate;
 - The following M&D Digester Inlet Valve parameters:
 - RPM;
 - Primary Exhaust (recycled) steam temperature and pressure;
 - Rotor pocket pre-purge steam temperature and pressure;
 - Rotor pocket purge steam temperature and pressure; and
 - Secondary exhaust temperature and pressure;
 - Digester production rate (tons of oven dried pulp (ODP)/hr);
 - Any other process parameter used by the Facility or testing firm in determining or calculating emission rates in all units of measure required by this Information Request.
5. “Sawdust Digester” means, for the purposes of this Information Request, the Messing and Durkee (M&D) No. 4 sawdust digester at the Facility.
6. “M&D Digester Inlet Valve” means the valve on the Sawdust Digester identified on page 4 of the slides labeled “M&D Digester Inlet Valve” of KapStone’s presentation to EPA on May 30, 2017, and provided to EPA via email on June 2, 2017.

**KAPSTONE
LONGVIEW, WASHINGTON
INFORMATION REQUEST**

QUESTIONS

1. **Methanol.** Within 90 days of receipt of this Information Request, KapStone must conduct, for the Sawdust Digester, a performance test simultaneously measuring the mass emission rate of total Hazardous Air Pollutants (HAP) as methanol¹ at each of the following locations as provided in Attachment A:
 - a. All lines or ducts from the M&D Digester Inlet Valve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and
 - b. All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.²
2. **Total Reduced Sulfur (TRS).** Within 90 days of receipt of this Information Request, KapStone must conduct, for the Sawdust Digester, a performance test simultaneously measuring the emission rate of TRS at each of the following locations as provided in Attachment A:
 - a. All lines or ducts from the M&D Digester Inlet Calve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and
 - b. All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.
3. **Advance Notification.** By no later than 30 days before any performance test required by Paragraphs 1 or 2 above is conducted, or unless EPA agrees in writing to some other time period, KapStone must provide notice of its intent to conduct such test to EPA and Ecology. This notification must include the scheduled date of the test, and a complete emissions test protocol/plan. If EPA requires any adjustment of the emissions test protocol/plan or operating conditions, EPA will notify KapStone within 30 days of receipt of the notice, and KapStone must make such adjustments and conduct the performance test in conformity with EPA's requirements. The emissions test protocol/plan must, at a minimum, include and address the following elements:
 - a. Purpose and scope of testing;
 - b. Source description, including a description of the operating scenarios and mode of operation during testing;
 - c. Schedule/dates of testing;
 - d. Process Data collected (as provided in Attachment A, all Process Data must be collected and reported at the frequency collected by the Facility, with a minimum frequency of at least one data point per hour; must cover the time period beginning 30 days prior to the

¹ Under 40 C.F.R. § 63.457(f), total HAP concentration shall be measured as one of the following: (1) As the sum of all individual HAPs; or (2) As methanol.

² EPA observed three such vents to atmosphere during an on-site inspection on August 24, 2016.

- performance testing and continuing until five days after the testing is concluded; and must be reported with the date and time of collection);
 - e. Sampling and analysis procedures, specifically requesting approval for any proposed alternatives to the reference test methods, and addressing minimum test length and minimum sample volume;
 - f. Sampling location description and proposed means of compliance with the reference test methods;
 - g. Appropriate piping and instrumentation diagrams depicting all proposed testing locations with the precise proposed sample collection point marked;
 - h. Analysis procedures and laboratory identification;
 - i. Quality assurance plan including Data Quality Objectives;
 - j. Calibration procedures and frequency;
 - k. Sample recovery and field documentation;
 - l. Chain of custody procedures;
 - m. Quality Assurance (QA)/Quality Control (QC) project flow chart;
 - n. Data processing and reporting;
 - o. Description of data handling and QC procedures; and
 - p. Report content and timing.
4. Report of Results. Within 45 days after conducting a performance test required under Paragraphs 1 or 2 above, KapStone must submit to EPA and to Ecology a report documenting the results of the performance test that includes, at a minimum, the following information:
- a. General identification information for the Facility including a mailing address, the actual address, the owner or operator or responsible official (where they are applicable) or an appropriate representative and an email address for this person;
 - b. Identification of emission point/vent(s) being tested, performance test dates, pollutant(s) being measured, the units of the standard or the pollutant emissions units;
 - c. A brief process description;
 - d. A complete unit description, including a description of feed streams and control devices, the appropriate source classification code (SCC), and the permitted maximum process rate (where applicable);
 - e. Summary page including:
 - i. Emission results, expressed in units identified in Table 1 of Attachment A; and
 - ii. Discussion of errors or problems encountered, both real and apparent;
 - f. Sampling site description; description of sampling and analysis procedures and any modifications to standard procedures; and quality assurance procedures;
 - g. Record of operating conditions during the test, including operating parameters for which emissions are being measured; record of preparation of standards; and record of calibrations;
 - h. Process Data collected (as provided in Attachment A, all Process Data must be collected and reported at the frequency collected by the Facility, with a minimum frequency of at least one data point per hour; must cover the time period beginning 30 days prior to the performance testing and continuing until five days after the testing is concluded; and must be reported with the date and time of collection);
 - i. Raw data sheets for field sampling;
 - j. Raw data sheets for field and laboratory analyses;
 - k. Chain-of-custody documentation;
 - l. Explanation of laboratory data qualifiers;

- m. Documentation of the determination of Method Detection Limit;
 - n. Example calculations of all applicable stack gas parameters, emission rates, percent reduction rates, and analytical results, as applicable. The report must include a description of all assumptions made in conducting the calculations and the basis for all data used in the calculations. Sufficient detail must be provided to enable EPA to duplicate the calculations using basic input data. In particular, this level of detail must be provided for calculations performed in determining emission rates measured during testing;
 - o. Identification information for the company conducting the performance test including a contact person and his/her email address; and
 - p. Any other information required by the test method, a relevant standard, or the EPA.
5. Additional Information. Concurrently with the submission of the last performance test report required to be submitted under this Information Request, provide:
- a. The dates and results of all tests not previously provided in response to this Information Request that evaluated either the TRS content or methanol concentration of emissions from the Sawdust Digester, any rotary valve on the Sawdust Digester, or any other portion of the sawdust feed system associated with the Sawdust Digester, including but not limited to the vent(s) identified in Paragraphs 1 or 2 above; and
 - b. The date of the most recent rebuild or significant maintenance of the M&D digester inlet valve to ensure the spacing between the valve vanes/rotors and the valve casing meets applicable specifications.

ATTACHMENT A**Performance Testing Procedures and Methods for the Information Request for
KapStone, Longview, Washington**

The Information Request requires emissions and other test data for multiple pollutants. Please refer to the Information Request for additional testing information, including the specific locations and pollutants to be tested at the Facility.

1.1 How to Select Sample Location

KapStone must use EPA Method 1 of Appendix A of 40 C.F.R. Part 60 to select the precise locations in the ducting at the emission points/vents specified by EPA in Paragraphs 1 and 2 of the Information Request-Questions, as well as the number of traverse points for sampling except as otherwise specified in section 1.2 and Table 1 below. If the physical configuration of the ducting at the sampling points specified by EPA precludes sampling in accordance with Method 1 criteria, KapStone must describe any deviations from Method 1 in the test protocol and provide supporting reasoning. See <https://www.epa.gov/emc/method-1-sample-velocity-traverses> for a copy of the method and guidance information for sampling situations not meeting Method 1 criteria.

1.2 Test Methods and Reporting

Table 1 presents a summary of the required test methods for each pollutant. For copies of the U.S. EPA methods, Performance Specifications (if applicable) and additional information, please refer to EPA's Emission Measurement Center website: <https://www.epa.gov/emc>.

KapStone must use the limit of detection (LOD), also known and referred to here as the method detection limit (MDL) determination procedure, in EPA Method 301, Section 15 to develop the MDL. The MDL must be determined in the same matrix as the samples that will be analyzed.

Each test must include a minimum of three valid test runs for each target pollutant at each sampling location specified in the Information Request.

Each Sawdust Digester and associated equipment being tested must be operated during testing under conditions that are representative of normal production and operation.

All pollutant concentrations must be reported on a dry moisture basis at standard conditions. The recommended units of concentration for each pollutant vary, and are listed in Table 1. Results of the performance tests must be reported as provided in Paragraph 4 of the Information Request-Questions.

In addition to the emission test data, KapStone must also collect and report the Process Data covering the time period beginning 30 days prior to the performance testing and continuing until five days after the testing is concluded. All Process Data must be at the frequency collected by KapStone, with a minimum frequency of at least one data point per hour and with the date and time of collection. The correlation between emissions measurements and Process Data (e.g., identify Method 16, run 1 for the associated Process Data) must be made clear in the Report.

Table 1 lists the pollutants and associated methods for testing KapStone's Sawdust Digester.

Table 1: KapStone's Sawdust Digester– Pollutants and Test Methods

Location/Pollutant¹	Test/Analysis Method	Comments	Units of Measure
All lines or ducts from the M&D Digester Inlet Valve to cyclones or directly to atmosphere, including the “secondary exhaust” line. Testing must be conducted prior to any cyclone; and All vent(s) to atmosphere which have connectivity with the screw conveyor/metering screw.²	EPA Method 308	Collect a minimum volume of 60 liters per run. Remove the silica gel sorbent tube prior to the final system leak check required in 8.1.3. Samples must be shipped on ice and arrive at lab < 20 deg. C.	ppmdv, lb/hr, lb/ton of ODP
	EPA Method 16	Conduct a minimum of 16 injections per test run over not less than three hours and no more than six hours.	ppmdv, uncorrected for oxygen content, lb/hr, lb/ton of ODP
	EPA Methods 1 & 2	Conduct a flow traverse for duct velocity calculation.	dscf/hr
Methanol, TRS, flow rate, moisture	EPA Method 4	Collect a minimum volume of 21 dscf at 0.75 cfm.	% H2O

See Attachment B for information on how to calculate and report values measured below MDLs.

¹ See page 4, slides labeled “M&D Digester Inlet Valve” of KapStone's presentation presented to EPA on May 30, 2017, and provided via email on June 2, 2017.

² EPA observed three such vents to atmosphere during an on-site inspection on August 24, 2016.

ATTACHMENT B

Calculating and Reporting Values Measured Below Method Detection Levels (MDL)

- Identify the status of measured values relative to detection levels on the performance test report using the following descriptions:
 - **BDL** (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory’s reported detection level(s).
 - **DLL** (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory’s reported detection level(s).
 - **ADL** (above detection level) – all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory’s reported detection level(s).
- For reporting and calculating individual test run data KapStone must use a scientifically acceptable approach to develop the method detection limit. The MDL must be determined in the same matrix as the samples that will be analyzed. Use the MDL determination procedure in EPA Method 301, Section 15. For analytical data reported from the laboratory as “nondetect” or “below detection level:”
 - Include a brief description of the procedures used to determine the analytical detection and in-stack detection levels;
 - Describe these procedures completely in the full test report including the measurements made, the standards used, and the statistical procedures applied;
 - Calculate the in-stack emissions rate for any analytical result reported as below detection level using the relevant analytical detection level as the reported value. **Note that the analytical detection level used in this calculation is not the analytical reporting level many laboratories provide. The analytical detection level is most often defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero.³ The analytical reporting level is often an arbitrary multiplication of the method detection level;**
 - Report the calculated emissions concentration or rate result as a bracketed “less than” detection level value (e.g., [<0.0105]); and
 - Report as numerical values (i.e., no brackets or $<$ symbol) any analytical data measured above the detection limit including any data between the analytical detection level and a laboratory-specific reporting or quantification level (i.e., flag as ADL, see below).

³ SW 846 Method 8000D, Determinative Chromatographic Separations, <https://www.epa.gov/hw-sw846/sw-846-test-method-8000d-determinative-chromatographic-separations>

- For pollutant measurements composed of multiple components or fractions (e.g., mercury and other metals sampling trains) when the result for the value for any component is measured below the analytical detection level:
 - Calculate in-stack emissions rate or concentrations as outlined above for each component or fraction;
 - Sum the measured and detection level values as outlined above using the in-stack emissions rate or concentrations for all of the components or fractions; and
 - Report the sum of all components or fractions as a bracketed “less than” detection level value (e.g., [<0.0105]);
 - Report also the individual component or fraction values for each run.

- For measurements conducted using instrumental test methods (e.g., Methods 3A, 6C, 7E, 10, 25A):
 - Record gaseous concentration values **as measured** including negative values and flag as ADL; do not report as BDL;
 - Calculate and report in-stack emissions rates using these measured values; and
 - Include relevant information relative to calibration gas values or other technical qualifiers for measured values as discussion in your test report.

- For reporting and calculating average emissions rate or concentration for a test when some results are reported as BDL:
 - Sum all of the test run values including those indicated as BDL or DLL as numerical values; and
 - Calculate the average emissions rate or concentration (e.g., divide the sum by three for a three-run test). Report the average emissions rate or concentration average.